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**A BIBLIOGRAPHY OF RUSSIAN  
SCIENTIFIC AND TECHNOLOGICAL  
LITERATURE IN MANUAL CONTROL  
AND ASSOCIATED AREAS**

*by C. M. Bertone*

Prepared under Contract No. NASw-869 by  
**THE BUNKER-RAMO CORPORATION**  
Canoga Park, Calif.

*for*



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LITERATURE IN MANUAL CONTROL AND ASSOCIATED AREAS

By C. M. Bertone

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NATIONAL AERONAUTICS AND SPACE ADMINISTRATION

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A BIBLIOGRAPHY OF RUSSIAN  
SCIENTIFIC AND TECHNOLOGICAL LITERATURE  
IN MANUAL CONTROL SYSTEMS AND ASSOCIATED AREAS

By C. M. Bertone

SUMMARY

This report is a survey of Soviet literature in the areas of Manual Control Systems, Human Engineering, Man in Space and associated areas of interest to U. S. Scientists involved in these disciplines. The information is reported in Bibliographic form with an Analysis of the findings and appropriate Appendices.

The information contained in the report contains reference to 917 documents covering these fields of endeavor and was limited by availability of material, geographic location of the libraries searched and the amount of time allocated to the study.

INTRODUCTION

Recent technological developments in the Soviet Union seemed to indicate that scientists in our country had inadequate access to Russian scientific and technological literature in the area of manual control systems. The main purpose of this study therefore, was to search the open literature for references in this area.

As a general guide, the following key topic areas were those designated as being of interest. The listing is in general ranked in importance from a to h.

- a. Human Engineering (manual control systems)
- b. Airborne flight displays and flight control techniques
- c. Pilot, aircraft and space vehicles
- d. Manned flight simulators
- e. Theory of control systems
- f. Air traffic control
- g. Psychology (as applied to Human Engineering)
- h. Other manual control systems (i.e. submarines, cars, etc.)

A priority of interest was then desired and the following list was decided on: in order of importance.

- a. Citations from the open literature, either in translated abstract of articles or untranslated citations.
- b. Russian scientific or engineering personnel working in the areas.
- c. Russian institutes or facilities.
- d. American scientists or engineers familiar with Russian works.

The report itself was to be concerned with the items previously mentioned and was to take the form of citations and an annotated bibliography. However, due to the length of time involved in receiving copies of translated reports it was later decided that an annotated bibliography was not possible in this initial study.

In order to provide a bibliography that is more than just a listing of documents and authors names I have supplied American source information whenever it was available. These notations in some cases also contain price information for summary translations or microfilms.

### Method of Collection

In order to properly ascertain the dimensions of the project, discussions were held with personnel from the following institution libraries:

Bunker-Ramo Corporation

University of California at Los Angeles

Main Library  
Research Library  
Biomedical Library  
Engineering Library

San Fernando Valley State College

Los Angeles Public Library

This information was then expanded with telephone calls to the University of Southern California, Tufts University and the Pacific Aeronautical Library. During the search for material, which will be described later, correspondence was initiated with other American scientists knowledgeable in the area and also with one of the leading Russian scientists. This then provided some information on sources of translations, Soviet institutions, methods of gathering information and availability of information.

A listing of "Guide Books to Russian Translations and Sources" (Appendix A) was then prepared. This list of material was carefully reviewed in order to determine:

1. Sources of Translations
  - a. Documents
  - b. Institutions
  - c. Companies
2. American authors knowledgeable of Soviet writings
3. Other guides to Russian translations



Material called from the Guide Books was then searched in order to extend our knowledge of the sources of translation. This portion of the study resulted in Appendix B, "Sources of Translations," Appendix C, "Soviet Libraries with Active Exchange Programs" and Appendix D, "Book Dealers Specializing in Subscriptions to Foreign Journals and Periodicals."

The actual task of searching the literature followed these steps. Each publication chosen was first reviewed for appropriate general topics, i.e. Control Systems, Astronautics, Human Engineering these then were carefully examined for pertinent bibliographic material. Each item chosen was carefully recorded and later typed on index cards for eventual sorting and cataloging. The information thus gathered comprises the major portion of the study. It also resulted in the compilation of Appendix E, "Soviet Periodicals and Journals", which is a compilation of only those journals felt to be appropriate to the study, and Appendix F "Documents Searched". The Appendices G, "Institutions of the Soviet Union", H, "Some names in Psychology" and I, "Some Scientists in the Space Program" were a natural fallout of the search for the citations.

Finally, the prepared cards were sorted and catagorized into the following groups:

1. Manual Control
2. Control
3. Human Engineering
4. Man in Space

5. Astronautics
6. Aviation
7. Cybernetics
8. Psychological Conferences
9. Psychology, General
10. Miscellaneous
11. Soviet Information on U.S. work

It was very difficult in some cases to categorize a reference as it could fit comfortably into one of several areas. No duplication or cross-reference between categories was made, the card was simply placed in that category in which the author felt it belonged. Many instances will arise in surveying the information which will be controversial and without duplication and cross-reference the method decided appears somewhat satisfactory.

After completion of sorting, the necessary Figures and analyses were prepared and the report sent to typing.

## Analysis

The study produced a total of approximately 1200 Bibliographic References. After rescreening and elimination a core of 917 were considered as being appropriate to the specifications outlined in the Introduction. The 283 reports were discarded on the basis of:

1. The generality of their title,
2. inappropriateness to the project,
3. age of the report, i.e. it appeared in the literature prior to 1957 and was of little significance to present work.

The sample utilized is the result of several factors:

1. The availability of information at local sources.
2. The productivity of Russian Scientists.
3. Assumed censorship imposed on some work being conducted in the Soviet Union.
4. The author's assumption as to what lies behind certain titles.
5. The results of translation of titles.

The analysis of the data collected follows in a series of six figures or charts.

Figure 1. Total Number of Bibliographic References in each Category.

This figure illustrates the total number of references appearing in each of the categories previously mentioned. The order from left to right is in keeping with the rating of the groups in the Method of Collection and is to be considered the ranking of their importance to the project. This rating was used as a base throughout the document wherever possible.

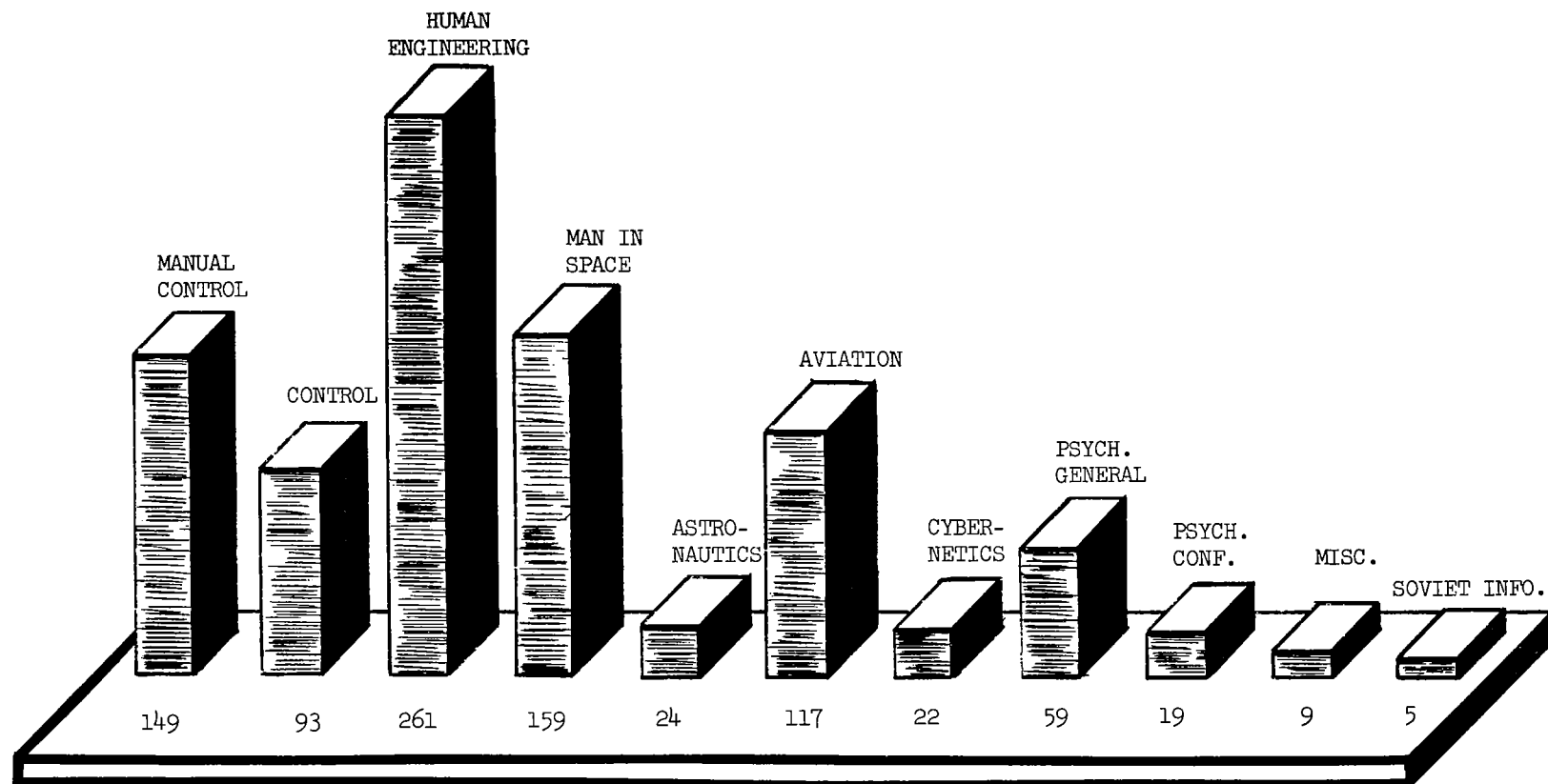


Figure 1. Total Number of Bibliographic References in each Category

Figure 2. Percent of Documents in each Category.

As stated previously the categorization of an item was not clear cut, a greater number of documents could have been filed under the area of Human Engineering. However, it is significant to note that even with the documents distributed over a wider area the Human Engineering category exceeds the main area (Manual Control) by over 100 references. Figure 2, the breakdown by percentages indicates more than 25 percent of the total number of cards were in the grouping of Human Engineering, while only 16 percent could be distinguished as "pure" Manual Control. This figure deviates from the established ranking of categories in order to better depict the true relationship of one category to another. It is ranked with the category containing the highest percentage on the extreme left and the other categories following in decreasing order.

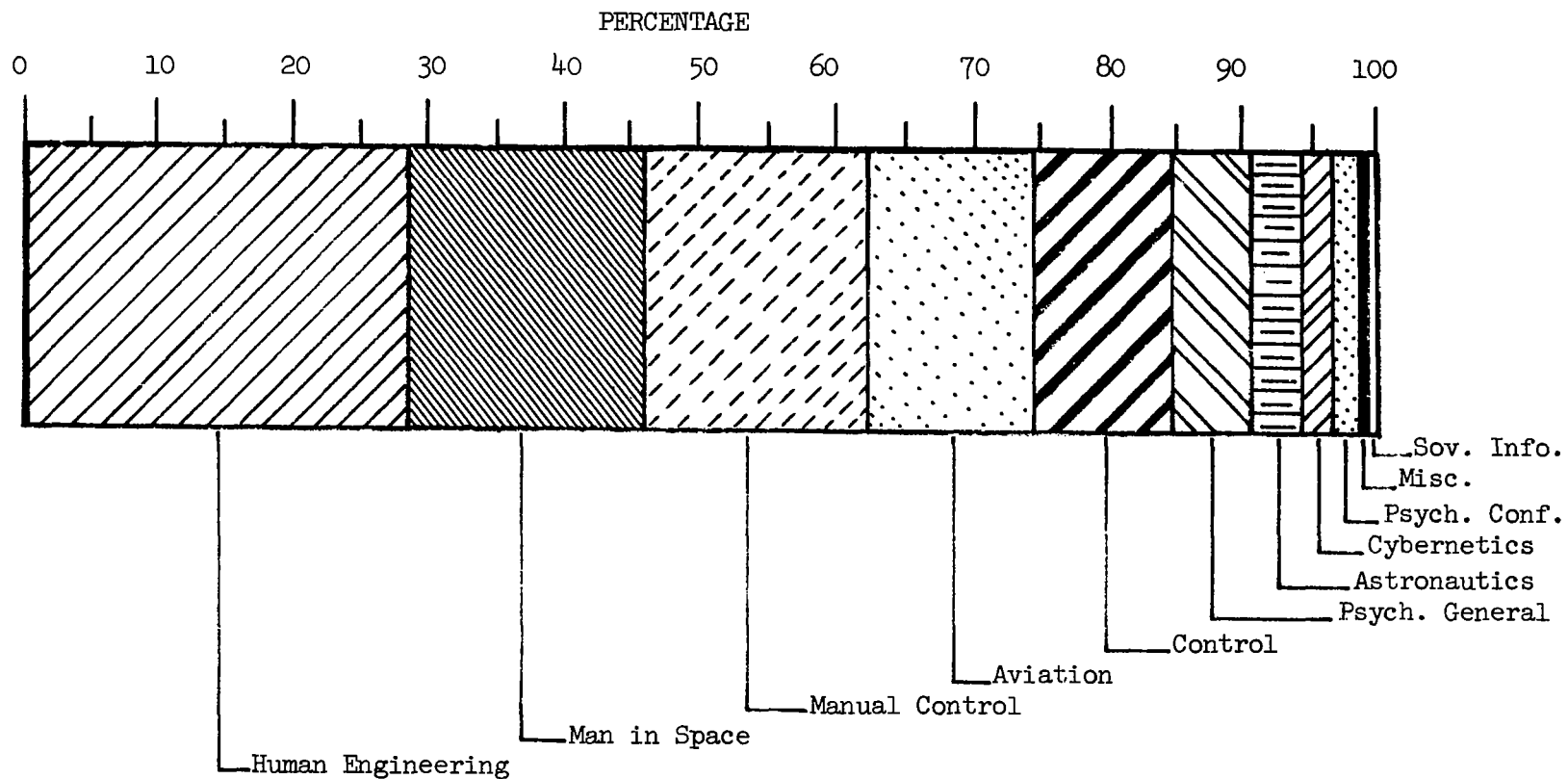


Figure 2. Percent of Documents in each Category

Figure 3. Comparison between Authored, Unauthored, and Book References in the same category.

The information contained in Figure 3 became apparent shortly after the first attempt at cataloging the index cards. Within each category the references automatically fell into three areas, i.e. those containing an Author's name, those that appeared in the literature Unathored and those clearly distinguishable as Books.

Some of the relationships noted in this figure are of interest, notably the small number of unauthored articles in relation to authored works in the category of Human Engineering. Others of interest are those relationships established in the category of Manual Control and Control.

In only 4 categories does the number of Books exceed the number of Unauthored references. These are in the areas of Manual Control, Control, Astronautics and Aviation.

There are then a total of 725 Authored references, 138 Unauthored and 54 Books shown in this figure.



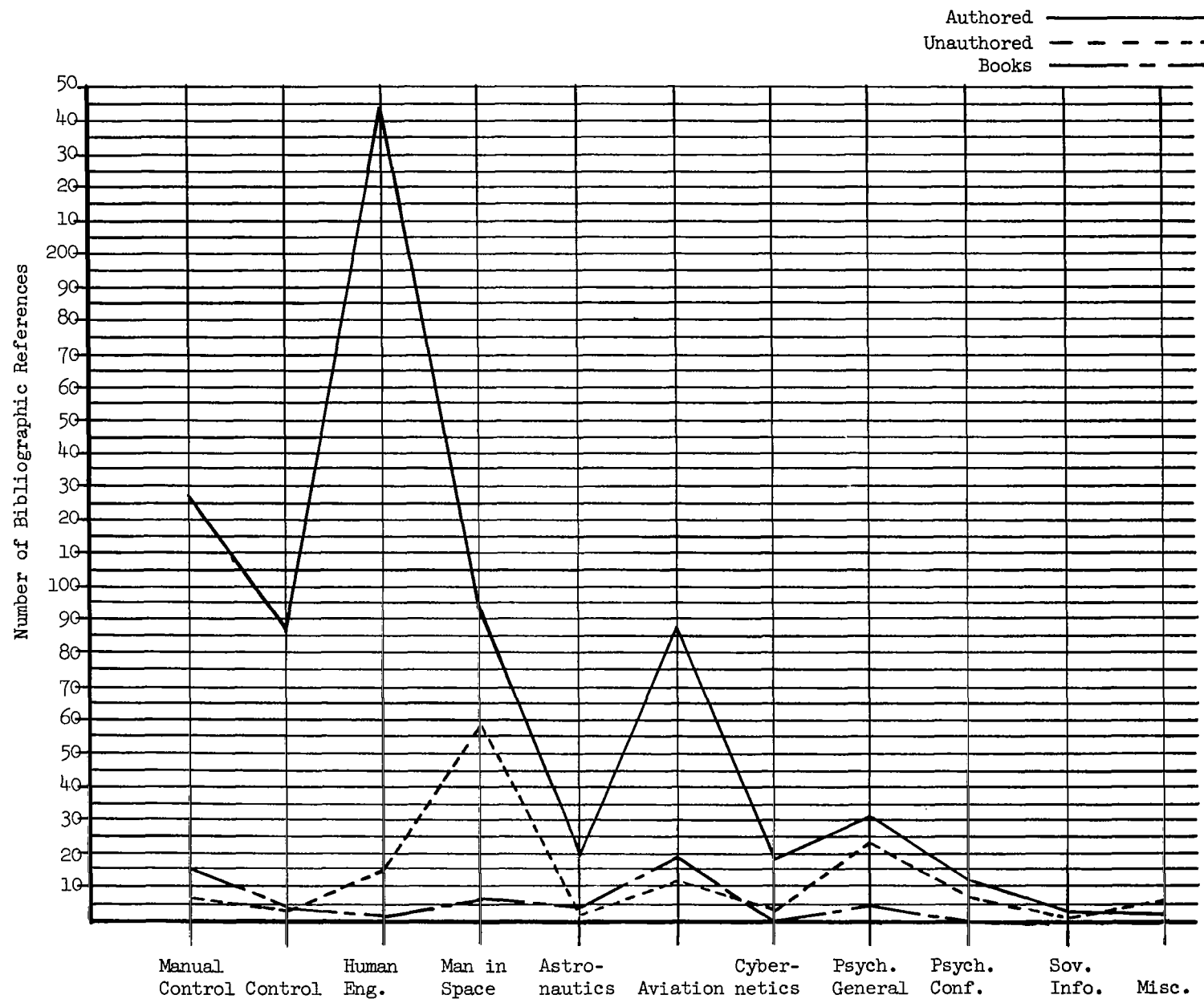


Figure 3. Comparison between Author, Unauthor and Book References in the same Category

Figure 4. Authors with 5 or more References.

In compliance with the specifications concerning the collection of names of individuals prominent in the field the author developed Figure 4. This is a representation of authors and pictorially depicts the number of references listed for each one.

The number five was arbitrarily determined as the smallest number of references to appear under each author's name. These 18 authors have been cited a total of 131 times, this represents 18 percent of the total number of authored articles appearing in the Bibliography.

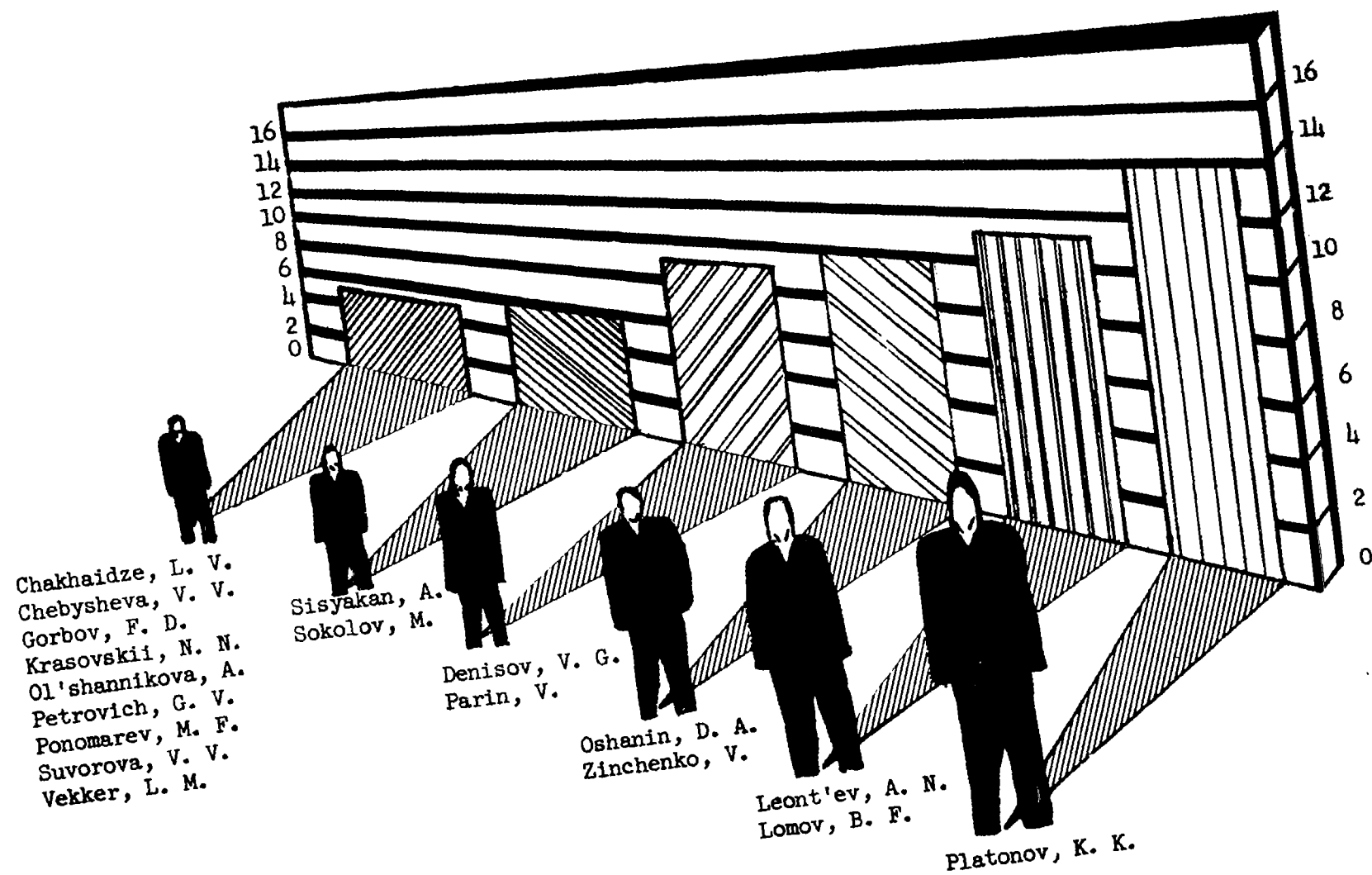


Figure 4. Authors with 5 or more References

Figure 5. The number of cards represented by Journal listings.

A count of cards indicates a total of 530 having a Soviet journal listing the source of the article. Of these, 10 journals account for 316 of the listings while the other 214 references are represented by 103 journals.

Figure 5 "Cards represented by Journal Listings" illustrates the relationship of the various stacks of cards to one another. Of particular interest here is that the 10 Journals account for almost 60 percent of the total number of cards with journal listings.

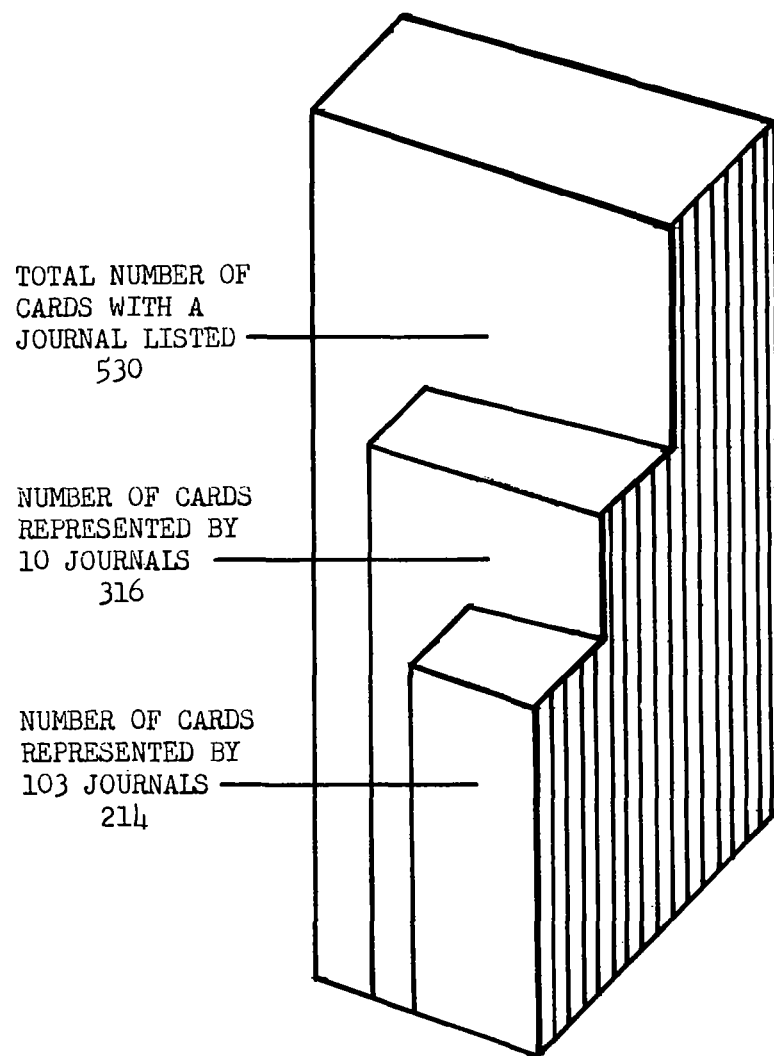


Figure 5. The Number of Cards represented by Journal Listings

Figure 6. The 10 Journals with the Largest Number of Reference Listings.

A more significant appraisal can be made in an analysis of Figure 6. This chart shows the number of times each of the 10 journals has been cited.

The journal "Problems of Psychology" accounts for over 39 percent of the 316 listings and 57 percent of the 214 documents represented by the other 103 journals.

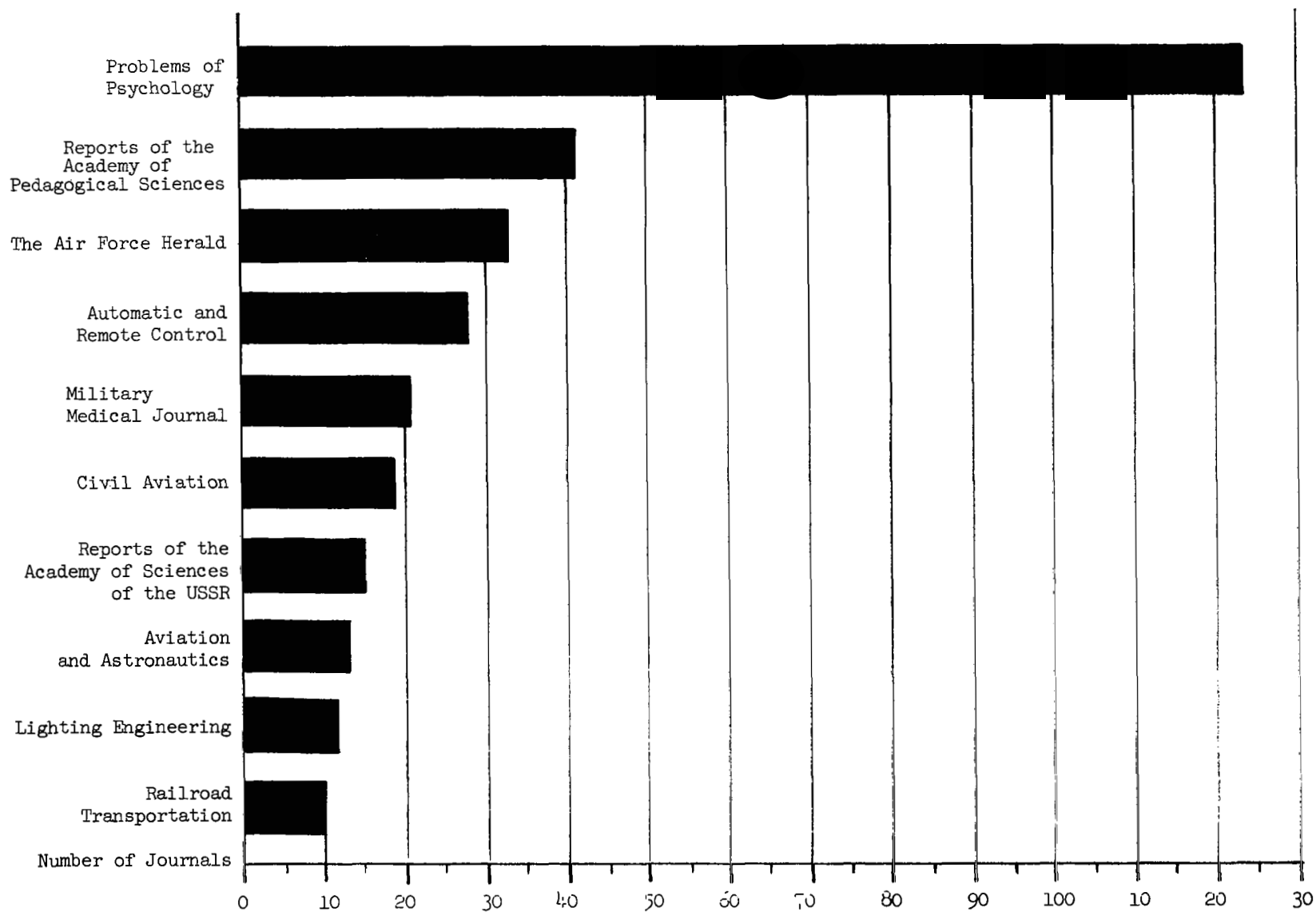


Figure 6. The 10 Journals with the largest number of Reference Listings

## Conclusions

The collection of material for this study revealed several interesting points concerning our knowledge, the availability of the Soviet Union's work in the area of Manual Control Systems and associated areas, and the amount of information available. Each of these areas will be elaborated on separately.

1. Very little has been written by Americans concerning Soviet work in the areas of interest.

A few of the references found concerning our knowledge of what the Soviet Union is doing in specific areas follows:

Barlow, D., Russians vary color and sound in man-machine studies. Control Engineering 8: 39, September 1961.

Brozek, J. Current status of Psychology in the USSR. Annual Review of Psychology, Vol. 13, pages 515-566, 1962.

Brozek, J., Recent developments in Soviet Psychology. Annual Review of Psychology, Vol. 15, pages 493-594, 1964.

Chapanis, A., Engineering Psychology, Annual Review of Psychology, Vol. 14, pages 285-318, 1963.

Ronco, P. G. & H. L. Sawyer. A Survey of Russian Literature related to Human Factors Engineering. Human Factors Journal, No. 4, pages 107-123, 1962.



This area was not specifically searched and the references mentioned above were a fallout of the main study. It is presumed that more information is available, but concluded that the literature is very limited.

2. A wealth of information concerning the works of Soviet Scientists is available in this country.

The material contained in the present study was collected from those libraries in the immediate vicinity of Bunker-Ramo Corporation, i.e. the Los Angeles area, and within a two months period of time. It is felt, by the author, that the surface has just been scratched and the bibliography could be expanded if more time were available and other facilities were researched.

3. Translation services should be expanded.

Although many of the journals cited in the study were available in translation, the major journal, Voprosy Psikhologii (Problems of Psychology), which was referenced 124 times, or one-fourth of the total journal listings, was only available in translation for the year 1960. This journal does, however, contain a limited number of "Summaries in English" for selected articles. The summaries do not cover all the areas of interest to Human Engineers.

4. Manual Control reports are limited.

After careful study of the material available in the area of Manual Control it was decided early in the undertaking of this project to expand the study to include the 10 other categories previously mentioned. Either very little work is being conducted in Manual Control Systems or

if a large effort is being expended it is not being reported in the open literature. Only 16 percent of the total cards in this report cover the Manual Control area. A brief survey showed that information in Automatic Control Systems was readily available and in very large quantities.

5. The area of Human Engineering seems well documented.

Prior to 1962 the term Human Engineering was not found in any of the titles referenced in this report, although articles pertinent to this field were found dating back to 1896. This report utilized information only as late as 1957 except for a few important articles that are dated in the 30's. After 1962 the reports of Human Engineering work, research and studies increases at a very high rate. It then becomes interchangeable with the term Cybernetics for awhile before again becoming a separate entity. Over 50 percent of the total bibliography could be justifiably applied to the category of Human Engineering.

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### Journals

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## Appendix A

### Guide Books to Russian Translations and Sources

Bauer, R. A.

The Man in Soviet Psychology  
Harvard University

Beyerly, E.

Translations from the Russian: A Guide to Sources

Dossick, J. J.

Doctoral Research on Russia and the Soviet Union  
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Gorokhoff, B. I.

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Bibliography of Reference Materials for Russian  
Area Studies  
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Haylor, L. J. H. and R. A. Kennedy

Sources of Translations of Aeronautical interest in NATO  
Countries

Horecky, P. L.

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Jackobson, E. H. and H. C. Duijker

International Directory of Psychologists Exclusive of  
the U.S.A.  
National Research Council, 1958

Kaiser, F. E.

Where can I get a Translation?

Krassovsky, D. M.

Russian Reference Books and Bibliographies  
University of California

Kraus, D.  
Sources of Technical Translations available to Librarians

Maichel, K.  
Guide to Russian Reference Books  
Hoover Institute, Stanford University, 1962

Maichel, K.  
A Selected List of Soviet Scientific Journals

Martianoff, N. N.  
Books by Russians and on Russia  
New York, 1960

Parker, S. M.  
Scientific Translations: A Guide to Sources and Services  
Public Health Service, 1959

## Appendix B

### Sources of Translations

American Rocket Society Journal  
500 5th Avenue  
New York 36, New York

ASLIB  
3 Belgrave Square  
London S. W. 1, England

Brookhaven National Laboratory  
Upton, New York

Central Intelligence Agency  
Washington, D. C.

Commonwealth Index of Unpublished Scientific  
and Technical Translations  
3 Belgrave Square  
London S. W. 1, England

Defense Research Board  
"A" Building, Cartier Square  
Ottawa, Canada

Engineering Societies Library  
29 West 39th Street  
New York 18, New York

Great Britain Department of Scientific and  
Industrial Research  
5-11 Regent Street  
London S. W. 1, England

Hoover Institution of War, Revolution and Peace  
Stanford University  
Palo Alto, California

Institute of Contemporary Russian Studies  
Fordham University  
New York 58, New York

Institute of the Aeronautical Sciences Library  
2 East 64th Street  
New York 21, New York

Library of Congress  
Washington, D. C.

Mayo Clinic Library  
Mayo Clinic  
Rochester, Minnesota

Ministry of Aviation  
Leysdown Road  
Mottingham S. E. 9, England

National Lending Library for Science and Technology  
Boston Spa  
Yorkshire, England

National Research Council  
Translation Center  
Ottawa 2, Canada

National Science Foundation  
Washington, D. C.

New York Consultants Bureau  
227 West 17th Street  
New York 11, New York

Pacific Aeronautical Library IAS  
7660 Beverly Boulevard  
Los Angeles, California

Pergamon Press  
122 East 55th Street  
New York 22, New York

Q. M. Research and Engineering Command  
Natick, Massachusetts

Science Museum Library  
London, England

Society for Cultural Relations with the U.S.S.R  
14 Kensington Square  
London W. 8, England

Special Library Association  
31 East 10th Street  
New York 3, New York

The European Translation Center  
Library of the Technical University  
Delft, Netherlands

The John Crerar Library  
86 East Randolph Street  
Chicago 1, Illinois

The Rand Corporation  
Santa Monica, California

The Russian Institute  
Columbia University  
New York 27, New York

UNESCO  
9 Place de Fontenoy  
Paris 7, e' France

Union Library Catalogue of Philadelphia Metropolitan  
Area, Inc.  
219 Logan Hall (36th and Woodland Avenue)  
Philadelphia 4, Pennsylvania

U. S. Department of Commerce  
Office of Technical Service  
Ohio Drive and Independence Avenue S. W.  
Washington 25, D. C.

U. S. Department of Health, Education and Welfare  
Public Health Services  
Washington, D. C.

U. S. Institute of Health Laboratories  
Translating Unit  
Bethesda 14, Maryland

U. S. National Academy of Science  
National Research Council  
Washington, D. C.

U. S. National Advisory Committee for Aeronautics  
Washington, D. C.

U. S. National Library of Medicine  
Washington, D. C.

U. S. Patent Office  
Scientific Library  
Washington 25, D. C.

U. S. Superintendent of Documents  
Government Printing Office  
Washington 25, D. C.

## Appendix C

### Soviet Libraries with Active Exchange Programs

Lenin State Library of the USSR, Moscow  
Gosudarstvennaya ordena Lenina biblioteka  
SSSR, imeni V. I. Lenina  
ul. Kalinina 3  
Moskva, G-19

Fundamental Library of the Social Sciences,  
USSR Academy of Sciences, Moscow  
Fundamental'naya biblioteka obshchestvennykh  
nauk Akademii nauk SSSR  
ul. Frunze, ii  
Moskva, 19

State Public Technological Library, Moscow  
Gosudarstvennaya publichnaya nauchno-tekhnich-  
eskaya biblioteka SSSR  
Kuznetskii most, 12  
Moskva

Saltykov-Shchedrin State Public Library, Leningrad  
Gosudarstvennaya ordena Trudovogo Krasnogo  
Znameni publichnaya biblioteka imeni M. E.  
Saltykova-Shchedrina  
Sadovaya, ul, 18  
Leningrad, D69

Library of the USSR Academy of Sciences, Leningrad  
Biblioteka Akademii nauk SSSR  
Birzhevaya Liniya, 1  
Leningrad, V-164

## Appendix D

### Book Dealers Specializing in Subscriptions to Foreign Journals and Periodicals

Cross World Books and Periodicals  
333 South Wacker Drive  
Chicago 6, Illinois

Wm. Dawson & Sons, Ltd.  
16 West Street  
Franham, Surrey, England

Four Continent Book Corporation  
156 5th Avenue  
New York 10, New York

Imported Publications and Products  
4 West 16th Street  
New York 11, New York

International University Booksellers, Inc.  
Meier & Holmes  
103 5th Avenue  
New York 3, New York

Walter J. Johnson, Inc.  
111 5th Avenue  
New York 3, New York

Kraus Reprint Corporation  
16 East 46th Street  
New York, New York 10017

Mapleton House Books, Inc.  
5412 16th Avenue  
Brooklyn 4, New York

Moore-Cottrell Subscription Agencies, Inc.  
North Cohocton, New York

Stechert-Hafner, Inc.  
31 East 10th Street  
New York 3, New York

Universal Distributors Co.  
52-54 West 13th Street  
New York 11, New York

Victor Kamkin, Inc.  
2906 14th Street N. W.  
Washington 9, D. C.

## Appendix E

### Soviet Periodicals and Journals

- Acoustics Journal  
(Akusticheskii Zhurnal)
- Advances of Modern Biology  
(Uspekhi Soveremennoi Biologii)
- Advances of Technology  
(Novosti Tekhnologii)
- Air Defense Herald  
(Vestnik Protivovozdushnoi Oborony)
- Astronomical Circular  
(Astronomicheskii Tsirkular)
- Astronomical Journal  
(Astronomicheskii Zhurnal)
- Automatic Control, Telemechanics and Communications  
(Avtomatika, Telemekhanika, i Sviaz')
- Automation and Remote Control  
(Avtomatika i Telemekhanika)
- Aviation and Astronautics  
(Aviatsionniya i Kosmos)
- Biology and Hearing  
(Biologiya i Slukh)
- Biometrics  
(Biometrika)
- Biophysics  
(Biofizika)
- Bulletin of Experiment Biology and Medicine  
(Biulleten' Eksperimental'noi Biologii i Meditsiny)
- Civil Aviation  
(Grazhdanskaya Aviatsiya)
- Clinical Medicine  
(Klimicheskaya Meditsina)



Economy and Organization of Industry  
(Ekonomiia i Organizatsiia Proizvodstva)

Electro Communications  
(Elektrosviaz')

Family and School  
(Sem'ia i Shkola)

Herald of the Academy of the Sciences  
(Akademiya Nauk SSSR Vestnik)

Herald of the Schools of Higher Education  
(Vestnik Vysshei Shkoly)

Instrument Building  
(Priborostroenie)

Journal of Applied Physics  
(Zhurnal Prikladnoi Fiziki)

Journal of Biology  
(Zhurnal Biologii)

Journal of Experimental Medicine  
(Zhurnal Eksperimental'noi Meditsiny)

Labor Hygiene and Professional Illnesses  
(Gigiena Truda i Professional'nye Zabolevaniia)

Machines and Tooling  
(Stanki i Instrument)

Medical Affairs  
(Vrachebnoe Delo)

Military Engineering Journal  
(Voenno-Inzhenernyi Zhurnal)

Military Naval Doctor  
(Voenno-Morskoi Vrach')

Military Sanitation  
(Voenno-Sanitarnoe Delo)

News of the Academy of Sciences of the USSR,  
Department of Technical Services  
(Akademiya Nauk SSSR Otdeleniye Tekhnicheskikh  
Nauk Izvestiya)

News of the Institutes of Higher Learning:  
Aeronautical Engineering  
(Izvestiya Vysshikh Uchebnykh Zavedeniy:  
Aviatsionnaya Tekhnika)

Otorhinolaryngological Herald  
(Vestnik Otorino-Laringologii)

Physiological Journal  
(Fiziologicheskii Zhurnal)

Problems of Cosmic Biology  
(Voprosy Kosmos Biologii)

Problems of Cybernetics  
(Problemy Kibernetiki)

Problems of Increasing the Work Efficiency  
of Transport  
(Problemy Povysheniia Effektivnoisti Raboty  
Transporta)

Problems of Philosophy  
(Voprosy Filos)

Problems of Physiological Optics  
(Problemy Fiziologicheskoi Optiki)

Problems of Physiology  
(Voprosy Fiziologii)

Problems of Psychology  
(Voprosy Psikhologii)

Proceedings of the Acoustics Commission of the  
Academy of Sciences USSR  
(Trudy Komissii po Akustike AN SSSR)

Radio Engineering  
(Radiotekhnika)

Railroad Transportation  
Zheleznodorozhnaya svyaz'

Reports of the Academy of the Sciences UKR  
(Akademiya Nauk SSSR Kiev Dopovidi)

Science and Life  
(Nauka i Zhizn')

✓  
Socialist Labor  
(Sotsialisticheskii Trud)

Soviet Aviation  
(Sovetskaia Aviatsiia)

Soviet Pedagogy  
(Sovetskaia Pedagogika)

Soviet Psychotechnology  
(Sovetskaia Psikhotekhnika)

Soviet Public Health  
(Sovetskaia Zdravookhranenie)

The Air Force Herald  
(Vestnik Vozdushnogo Flota)

The Complex Mechanization of Industrial Processes  
in Machine Building  
(Kompleksnaia Mekhanizatsiia Proizvodstvennykh  
Protsessov v Mashinostroenie)

The Military Communicator  
(Voennaya Sviazist')

The Military Herald  
(Voennyi Vestnik)

Theory and Practice of Physical Culture  
(Teoriia i Praktika Fizicheskoi Kul'tury)

Wings of the Motherland  
(Kry'ya Rodiny)

## Appendix F

### Documents Searched

Aeronautical Engineering Index  
International Aerospace Abstracts  
Institute of Aeronautical Sciences  
2 East 4th Street  
New York 21, New York

Air Traffic Control  
Air Traffic Control Association  
910 17th Street N.W.  
Washington 6, D. C.

Annual Review of Psychology  
Annual Reviews, Inc.  
Palo Alto, California

Astronautics Information Abstracts  
Astronautics Open Literature Survey  
Astronautics Abstracts Reports and Open Literature  
Jet Propulsion Laboratory  
4800 Oak Grove Drive  
Pasadena, California

Aviation Week & Space Technology  
Hightstown, New Jersey

Bibliography of Translations from Russian Scientific and  
Technical Literature  
Serial Publications of the Soviet Union (SPSU)  
Guide to Soviet Bibliographies  
List of Russian Serials being Translated into English and  
Other Western Languages  
Monthly Index of Russian Accessions (MIRA)  
U. S. Department of Commerce  
Office of Technical Services  
Ohio Drive and Independence Avenue S. W.  
Washington 25, D. C.

Contemporary Psychology  
Psychological Bulletin  
Psychological Abstracts  
Journal of Experimental Psychology  
The American Psychologist  
American Psychological Association  
1333 16th Street N. W.  
Washington, D. C. 20036

Dissertation Abstracts  
Universal Microfilms, Inc.  
313 North 1st Street  
Ann Arbor, Michigan

Ergonomics  
Ergonomics Research Society  
London, England

Flight  
Iliffe & Sons, Ltd.  
Dorset House  
Stamford Street  
London, S. E., England

Human Factors Journal  
Human Factors Society  
1532 3rd Street  
Santa Monica, California

Index Aeronautics  
Ministry of Supply  
Leysdown Road  
Mottingham S. E. 9, England

Interavia (World Review of Aviation and Astronautics)  
6 Corraterie  
Geneva, Switzerland

International Aerospace Reports  
Institute Aerospace Sciences, Inc.  
Phillipsburg, New Jersey

Journal of Aeronautics and Astronautical Abstracts  
Index Aeronautics  
Ministry of Aviation  
Leysdown Road  
Mottingham S. E. 9, England

List of Books from the USSR and Translated Books  
Translation Contents List of Russian Periodicals  
LLU Translation Bulletin  
National Lending Library for Science and Technology  
Boston Spa  
Yorkshire, England

Scientific and Technical Aerospace Reports  
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## Appendix G

### Institutions of the Soviet Union

Academy of Medical Sciences, USSR  
Director: Prof. N. N. Litvinov  
(Akademiia Meditsinskykh Nauk SSSR)

Academy of Sciences, USSR, The Institute of  
Biological Physics  
(Akademiia Nauk SSSR, Institut Biologicheskoi Fiziki)

Experimental Design Bureau  
(Opytnoe Konstruktivnoe Biuro)

Institute of Industrial Hygiene and Diseases  
(Institut Gigieny Promyshlennosti i Zabolevaniy)

Kirov Academy of Military Medicine  
(Akademiia Voennoi Meditsiny, Kiro)

Military Medical Research Institute, Sofia  
(Voenno-Meditsinskii Issledovatel'skii Institut, Sofia)

Research Institute of Physical Culture  
(Issledovatel'skii Institut Fizicheskoi Kul'tury)

The Academy of Sciences USSR, The Pavlov Physiological  
Institute  
(Akademiia Nauk SSSR, Fiziologicheskii Institut im Pavlova)

The All-Union Scientific Research Institute for Industrial  
Safety, Leningrad  
(Vsesoiuznyi Nachno-Issledovatel'skii Institut Bezopasnosti  
Promyshlennosti)

The All-Union Scientific Research Institute of Labor  
Protection  
(Vsesoiuznyi Nachno-Issledovatel'skii Institut Okhrany  
Truda)

The All-Union Scientific Research Institute on the  
Safety Engineering in the Oil Industry  
(Vsesoiuznyi Nachno-Issledovatel'skii Institut po Tekhnike  
Bezopasnosti v Neftianoi Promyshlennosti)

The Central Laboratory of Aviation Medicine, Moscow  
(Tsentral'naya Laboratoriya Aviatsionnoi Meditsiny)

The Central Work Ability Testing Institute, Moscow  
(Tsentral'nyi Institut Ekspertizy Trudosposobnosti)

The Central Scientific Research Institute of Technology  
and Machine Building  
(Tsentral'nyi Nauchno Issledovatel'skii Institut  
Tekhnologii i Mashinostroeniia)

The Institute of Labor Hygiene and Professional  
Illnesses, Leningrad  
Director: Prof. A. A. Letavet  
(Institut Gigieny Truda i Prfzabolevanii)

The Kazan Aviation Institute  
(Aviatsionnyi Institut, Kazan)

The Leningrad Institute of Labor Safeguards  
(Leningradskii Institut Okhrany Truda)

The Leningrad Institute of Labor Safety  
(Leningradskii Institut Bezopast'nosti Truda)

The Leningrad Sanitation-Hygiene Medical Institute  
(Sanitarno-Gigienicheskii Meditsinskii Institut)

The Leningrad Scientific Research Institute of  
Physical Culture  
(Leningradskii Nauchno Issledovatel'skii Institut  
Fizicheskoi Kul'tury)

The Moscow Institute of Labor Protection  
(Moskovskii Institut Okhrany Truda)

The Pavlov Leningrad Medical Institute  
(Leningradskii Meditsinskii Institut im Pavlova)

The Sergo Ordzhonikidze Aviation Institute, Moscow  
(Aviatsionnyi Institut im. Sergo Ordzhonikidze)

The State Committee on Building Affairs, Moscow  
(Gosudarstvennyi Komitet po Delam Stroitel'stv)

## Appendix H

### Additional Names in Psychology not listed as Authors in this Report

Abul'yan, V. A.	Lenin, V. I.
Aikon, H. D.	Lepeshkin, V. V.
Alekin, R. D.	Liamina, G. M.
Alyakrinskii, V. V.	Lope, Yu
Chudnovskii, V. E.	Mankevich, V. I.
Fonarev, A. M.	Manuseva, A. M.
Garner, W. R.	Mikhalevshaya, M. B.
Gaydos, H. F.	Mileryan, E. A.
Grigolava, V. V.	Orchinnakova, O. V.
Hake, H. W.	Prangishvili, A. S.
Ivanova, M. P.	Shirokikh, V. N.
Kasparova, M. G.	Tarakanov, V. B.
Khodzhava, Z. I.	Turokskaia, Z. G.
Klass, Yu A.	Yarmolenko, A. B.
Kopytova, L. A.	Zhurova, L. E.
Kuz'minov, A. P.	



## Appendix I

### Some Scientists in the Space Program

Ambartsumyan, V. A. (Astrophysicist)  
Blagonravov, A. A. (Academician) (Lt. General)  
Bogolybuv, N. N. (Mathematician)  
Bolkhovitinov, V. F. (Prof. Aeronautical Engineering)  
(Maj. Gen.)  
Dement'ev, P. V. (Aeronautics) Chairman State Comm.  
on Aviation Engineering  
Dobronravov, V. V. (Professor)  
Emel'ianov, V. S. (Atomic Energy)  
Kapitsa, P. I. (Physicist)  
Keldysh, M. V. (Aeronautics)  
Khlebtsevich, Yu S.  
Korovin, Y. A.  
Merkulov, I. A. (Design Engineer)  
Ogordnikov, K. F. (Astronomer)  
Orekhov, F. T.  
Pobedonstsev, Yu A. (Prof. Aerodynamics) (Col.)  
Pokrovsky, G. I. (Nuclear Physicist) (Maj. General)  
Rudnev, K. N. (Armaments)  
Sanakoyev, Sh P.  
Sedov, L. I. (Academician)  
Seryapin, A. D.  
Shternfeld, A. A.  
Slavski, E. P. (Atomic Energy Weapons)  
Stanyukovich, K. P. (Professor)  
Varvarov, N. A.  
Zhukov, C. P.